MODIFICATIONS TO CLAIM STATUS

In complete response to the Examiner's Requirement for Restriction, dated 09/02/2004, the Applicant hereby elects Group I. Accordingly, claims are withdrawn as seen below.

A) Claim 1, 2, 21 and 22 are currently amended;

B) Claims 3, 4, 12—20 remain in their original form; and

C) Claims 5—11 are currently withdrawn.

Listing of Claims

1. (Currently amended.) A biomass gasifier apparatus, comprising:

(A) a fuel input system;

(B) a gasifier cell, configured to receive ~~receiving~~ fuel from the fuel input system; and

(C) ~~whereby~~ wherein the gasifier cell is configured to receive heated gas ~~is supplied to the gasifier cell~~, and to exhaust a mixture of gases, char and ash ~~is exhausted~~ from an upper portion of the gasifier cell.

2. (Currently amended.) The biomass gasifier apparatus of claim 1, wherein the gasifier cells comprises a fluidized bed gasifier cell, comprising:

(a) bed material, carried at the base of the fluidized bed gasified cell;

(b) a fluidizing gas plenum, carried within the fluidized bed gasifier cell;

(c) a plurality of manifolds, arranged within the fluidized bed gasifier cell, ~~whereby~~ wherein a space is sufficient between adjacent manifolds to allow tramp material to pass downwardly; and

(d) a plurality of nozzles are supported by each manifold, ~~whereby~~ wherein gas released by the nozzles fluidizes the bed material.

3. (Original.) The biomass gasifier apparatus of claim 2, additionally comprising:

(A) a cyclone, having an input in communication with the fluidized bed gasifier cell, for receiving a mixture of gases, char and ash from an upper portion of the fluidized bed gasifier cell, and for separating the mixture into first and second outputs, comprising a first output exhausting a mixture of low BTU gas, and a second output exhausting gas carrying a mixture of ash and char.

4. (Original.) The biomass gasifier apparatus of claim 2, additionally comprising:

(A) a bed change-out system, in communication with the fluidized bed gasifier cell, for removing tramp, clinkers and other waste from the bed material.

5. (Withdrawn.) The biomass gasifier apparatus of claim 1, additionally comprising:

(a) a primary gas clean-up system, having an input attached to the gasifier cell, whereby output from the fluidized bed gasifier cell is enhanced by the removal of char and ash from the gas.

6. (Withdrawn.) The biomass gasifier apparatus of claim 5, additionally comprising:

(A) a char combustion cell, having an input connected to the second output of the high-temperature gas clean-up system, oxidizes the char at elevated temperatures.

7. (Withdrawn.) The biomass gasifier apparatus of claim 6, additionally comprising:

(A) a heat exchanger, having a first input connected to an output of the char combustion cell, receives gas leaving the char combustion cell and removes heat energy.

8. (Withdrawn.) The biomass gasifier apparatus of claim 7, additionally comprising:

(A) a secondary gas cleanup unit, having an input connected to a first output of the heat exchanger, receives gases discharged from the char combustion cell that have been cooled by the heat exchanger, and removes ash from the gas and exhausts cleaned gas through an output.

9. (Withdrawn.) The biomass gasifier apparatus of claim 8, wherein the secondary gas cleanup unit comprises a cyclone.

10. (Withdrawn.) The biomass gasifier apparatus of claim 9, wherein the secondary gas cleanup unit comprises a multi-clone.

11. (Withdrawn.) The biomass gasifier apparatus of claim 9, wherein the secondary gas cleanup unit comprises a electrostatic precipitator.

12. (Original.) The biomass gasifier apparatus of claim 4, wherein the secondary gas clean-up system comprises:

(A) a cyclone, having an input in communication with the gasifier cell, for receiving a mixture of gases, char and ash from an upper portion of the gasifier cell, and for separating the mixture into first and second outputs, comprising a first output exhausting a mixture of low BTU gas, and a second output exhausting gas carrying a mixture of ash and char.

13. (Original.) The biomass gasifier apparatus of claim 12, additionally comprising:

(A) a char combustion cell, having an input connected to the second output of the cyclone, oxidizes the char at elevated temperatures.

14. (Original.) The biomass gasifier apparatus of claim 13, additionally comprising:

(A) a heat exchanger, having a first input connected to an output of the char combustion cell, receives gas leaving the char combustion cell and removes heat energy.

15. (Original.) The biomass gasifier apparatus of claim 14, additionally comprising:

(A) a secondary gas cleanup unit, having an input connected to a first output of the heat exchanger, receives gases discharged from the char combustion cell that have been cooled by the heat exchanger, and removes ash from the gas and exhausts cleaned gas through an output.

16. (Original.) The biomass gasifier apparatus of claim 15, wherein the secondary gas clean-up system comprises:

(A) a multi-clone unit.

17. (Original.) The biomass gasifier apparatus of claim 15, wherein the secondary gas clean-up system comprises:

(A) a cyclone.

18. (Original.) The biomass gasifier apparatus of claim 15 wherein the secondary gas clean-up system comprises:

(A) a ceramic filter.

19. (Original.) The biomass gasifier apparatus of claim 15, wherein the secondary gas clean-up system comprises:

(A) a baffle device.

20. (Original.) The biomass gasifier apparatus of claim 14, additionally comprising:

(A) a fluid bed gasifier fan, having an input connected to the output of the gas cleanup unit, forces a gas mixture of the cleaned gas from the gas cleanup unit and additional gas at high pressure into a second input of the heat exchanger, wherein the gas mixture is heated, exhausted from a second output of the heat exchanger, and delivered to the fluidizing gas plenum of the fluid bed gasifier cell.

21. (Currently amended.) A biomass gasifier apparatus, comprising:

(A) a fuel input system;

(B) a fluidized bed gasifier cell, receiving fuel from the fuel input system;

(C) ~~whereby~~ wherein a mixture of gases, char and ash is exhausted from an upper portion of the fluidized bed gasifier cell;

(D) a cyclone, having an input in communication with the fluidized bed gasifier cell, for receiving a mixture of gases, char and ash from an upper portion of the fluidized bed gasifier cell, and for separating the mixture into first and second outputs, comprising a first output exhausting a mixture of low BTU gas, and a second output exhausting gas carrying a mixture of ash and char; and

(E) a char combustion cell, having an input connected to the second output of the cyclone, oxidizes the char at elevated temperatures; and

(F) ~~whereby~~ wherein gas heated within the char combustion cell is use to fluidize the fluidized bed gasifier cell.

22. (Currently amended.) A biomass gasifier apparatus, comprising:

(A) a fuel input system;

(B) a fluidized bed gasifier cell, receiving fuel from the fuel input system, comprising:

(a) bed material, carried at the base of the fluidized bed gasified cell;

(b) a fluidizing gas plenum, carried within the fluidized bed gasifier cell;

(c) a plurality of manifolds, arranged within the fluidized bed gasifier cell, ~~whereby~~ wherein a space is sufficient between adjacent manifolds to allow tramp material to pass downwardly; and

(d) a plurality of nozzles are supported by each manifold, ~~whereby~~ wherein gas released by the nozzles fluidizes the bed material; and

(C) a bed change-out system, in communication with the fluidized bed gasifier cell, for removing tramp, clinkers and other waste from the bed material;

(D) a cyclone, having an input in communication with the fluidized bed gasifier cell, for receiving a mixture of gases, char and ash from an upper portion of the fluidized bed gasifier cell, and for separating the mixture into first and second outputs, comprising a first output

exhausting a mixture of low BTU gas, and a second output exhausting gas carrying a mixture of ash and char;

(E) a char combustion cell, having an input connected to the second output of the cyclone, oxidizes the char at elevated temperatures;

(F) a heat exchanger, having a first input connected to an output of the char combustion cell, receives gas leaving the char combustion cell and removes heat energy;

(G) a gas cleanup unit, having an input connected to a first output of the heat exchanger, receives gases discharged from the char combustion cell that have been cooled by the heat exchanger, and removes ash from the gas and exhausts cleaned gas through an output; and

(H) a fluid bed gasifier fan, having an input connected to the output of the gas cleanup unit, forces a gas mixture of the cleaned gas from the gas cleanup unit and additional gas at high pressure into a second input of the heat exchanger, wherein the gas mixture is heated, exhausted from a second output of the heat exchanger, and delivered to the fluidizing gas plenum of the fluid bed gasifier cell.